Headquarters U.S. Air Force

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New Screening for Battlefield Airmen Candidates

AF/A1PT
AFPC/DSYX
May 2014

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USAF

Battlefield Airmen & Combat Support:
Selection & Classification Process

Cognitive – Physical – Personality
Three Component Models

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DoD HFE TAG
Personnel Selection & Classification SubTAG
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Overview

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- **Battlefield Airman (BA) and Combat Support (CS)**

- **BA & CS: high overhead to recruit + high attrition to train**

- **Traditionally selected on Cognitive and Physical Tests**

- **Need to incorporate personality factors**

- **Develop 3-componant models:**

  Cognitive + Physical + Personality

- **Resulting in six tailored models for: PJ, CCT, SOWT, TACP, SERE, EOD**
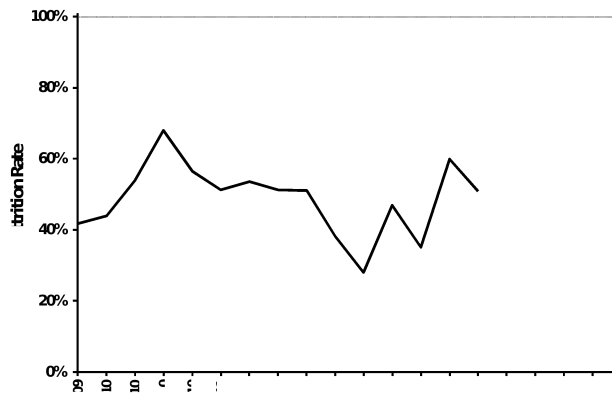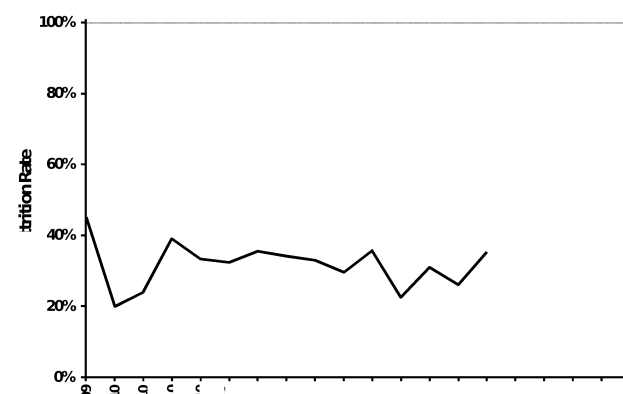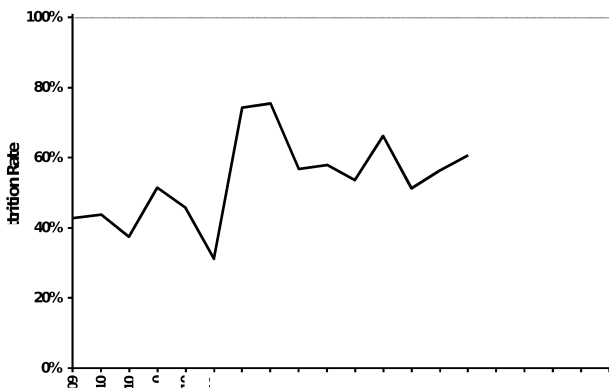
Problem – BA Attrition
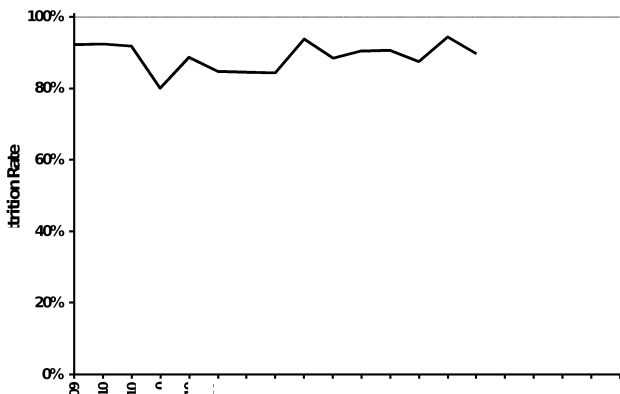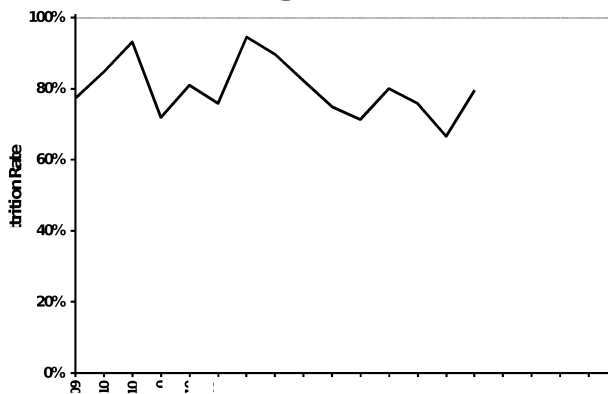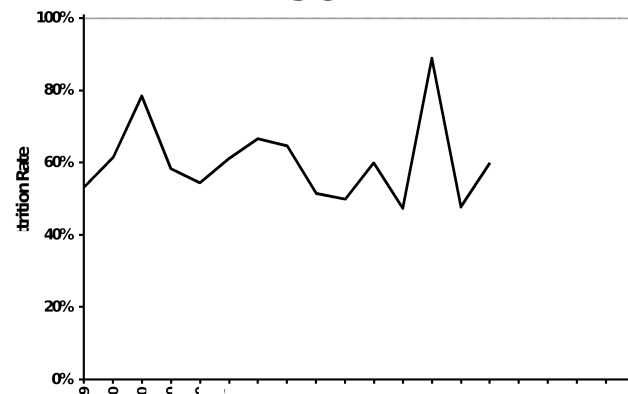
Tailored Adaptive Personality Assessment Scales (TAPAS)

- **Developed under contract by Army Research Institute**
- **Broad assessment of personality traits related to performance in military specialties**
- **State-of-the-art personality test**
  - **Adaptive**
    - **Minimizes testing time, item exposure, and test compromise potential**
  - **Designed to prevent "gaming the test"**
    - **Each item consists of two statements, balanced in social desirability; respondent picks statement that is "more like me."**
- **Other advantages**
  - **Proprietary to DoD, secure**
  - **Free to AF**
  - **Already administered in MEPS**

- **TAPAS, administered to AF applicants in the MEPS from 2009 to present**

- **Selection models developed by AFPC/DSYX for each BA-related career field with optimal combination of 3 measures:**
  - **ASVAB – cognitive**
  - **PAST - physical (swim, run, pull-ups, push-ups, and sit-ups)**
  - **TAPAS - personality**

- **Validated with training data from BA career fields**
  - **Cross-validated to ensure model stability**

- **Resulting models show unique predictors for each career field – provides good utility for classification**

Air Force Specialty (AFS)	R	R^2	Cohen's d - Ethnicity
Pararescue (PJ)	.497**	.247	.318
Combat Control (CCT)	.483**	.233	.374
Explosive Ordnance Disposal (EOD)	.461**	.213	—
Survival, Evasion, Resistance, and Escape (SERE)	.597**	.356	.110
Special Operations Weather (SOWT)[A]	.264*	.069	-.053
Tactical Air Control Party (TACP)[B]	.487**	.237	-.020

BA/CS Models
What goes in...What comes out

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9 ASVAB SubScores:
Gen Sci, Arith Rea, Word Kno, Para Comp, Math Kno, Elec Info, Auto &Shop, Mech Comp, Assem Obj

4 or 5 initial PAST SubScores:
Pull Ups, Push Ups, Sit Ups, 1.4K Run, .5K Swim

Unique Model for EACH AFS

15 TAPAS SubScores:
Achiev, Adjust, Coop, Domin, EvenTemp, AttnSeek, Selflessness, IntellEffic, Non-Delinquency, Order, Phys Cond, Self-Cntrl, Sociability, Tolerance, Optimism

PI
*.6
CCT
*.3
SOWT
*.3
TACP
*.3
SERE
*.3
EOD
*.3

Sub-Set of ASVAB Weighted Scores

+

Sub-Set of TAPAS Weighted Scores

+

Sub-Set of PAST Weighted Scores

=

Raw Likelihood of Training Success

Percentile Score

"Go" or "No Go"

* AFS Model cut score, roughly the portion of each model applicant pool predicted to be rejected by model; models based on likelihood of completing early training, validated against several years of pipeline training results
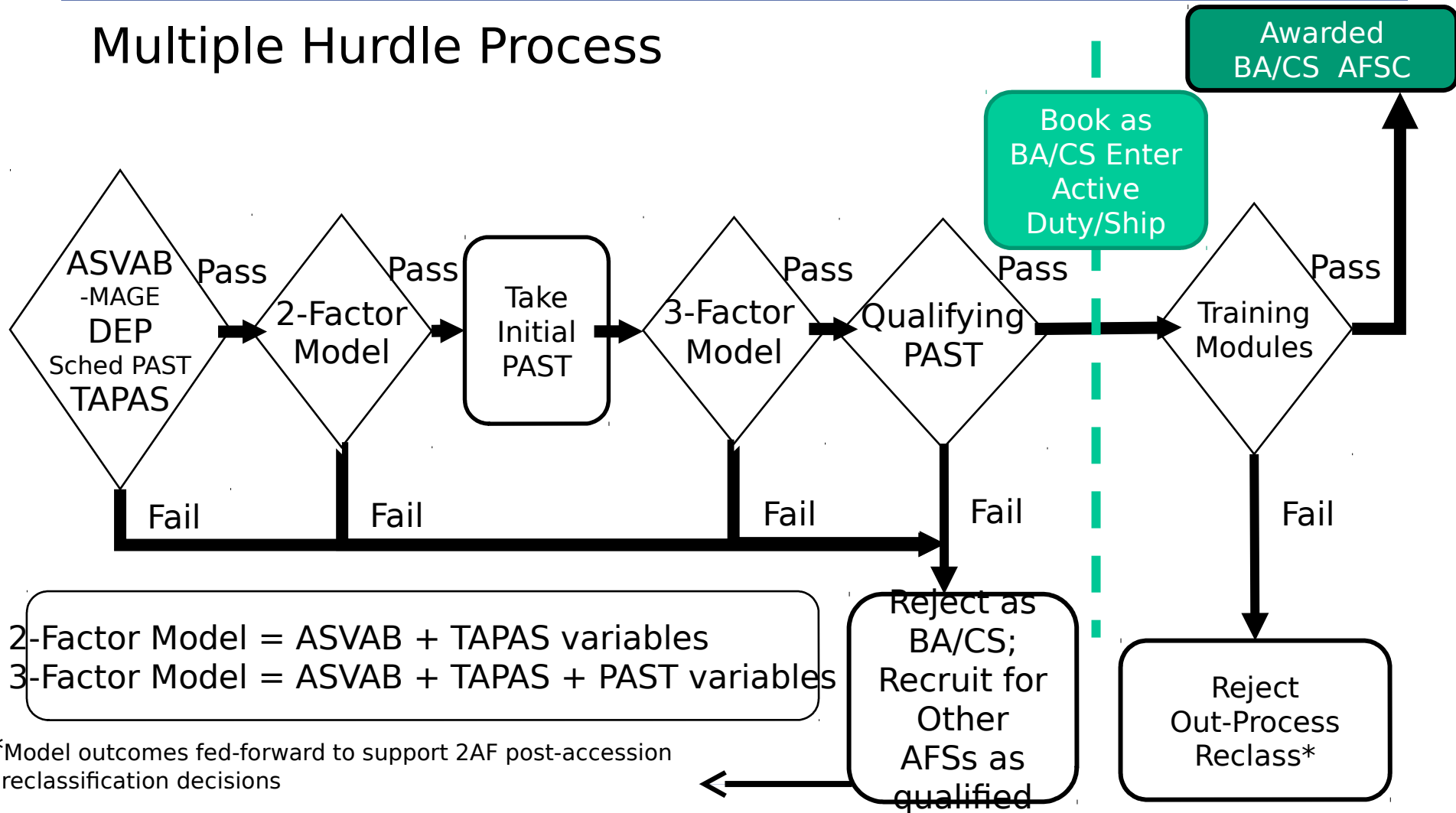
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Battlefield Airman – Combat Support

Multiple Hurdle Process

```
ASVAB          Pass    2-Factor    Pass    Take      Pass    3-Factor    Pass    Qualifying    Pass            Training    Pass    Awarded
-MAGE                  Model               Initial           Model               PAST                          Modules             BA/CS  AFSC
DEP                                        PAST
Sched PAST
TAPAS
```

Book as BA/CS Enter Active Duty/Ship

| Fail | Fail | Fail | Fail | | Fail |

Reject as BA/CS; Recruit for Other AFSs as qualified

Reject Out-Process Reclass*

2-Factor Model = ASVAB + TAPAS variables
3-Factor Model = ASVAB + TAPAS + PAST variables

*Model outcomes fed-forward to support 2AF post-accession reclassification decisions

- Plan
  - Screen all BA/combat support candidates with combined TAPAS / PAST / ASVAB models pre-accession
  - Vector candidates to best fit based on combined models
  - AFPC/DSYX will continue to refine/advance models

Women in the Service Review (WISR) Plan

- Eliminate gender-based assignment restrictions for positions in units with previously closed AFSCs
  - Seven Battlefield Airmen AFSCs
    - PJ/CRO, CCT/STO, SOWT/SOWO, TACP

- Develop and validate mental and physical ability standards
  - Job-relevant and predictive for all subgroups
  - Adverse impact minimized
  - Test bias minimized

- No outcome and limited predictor data for females
  - Criterion-related validity approach not possible initially
  - Validity must be based on job analysis and alternative approaches only

- Known gender differences on physical ability measures (d = .2 to 2.10; Hough, Oswald, & Ployhart, 2001)
  - Critical to have job analysis evidence to ensure only physical abilities required for job are used as predictors

- Training criteria may contain bias
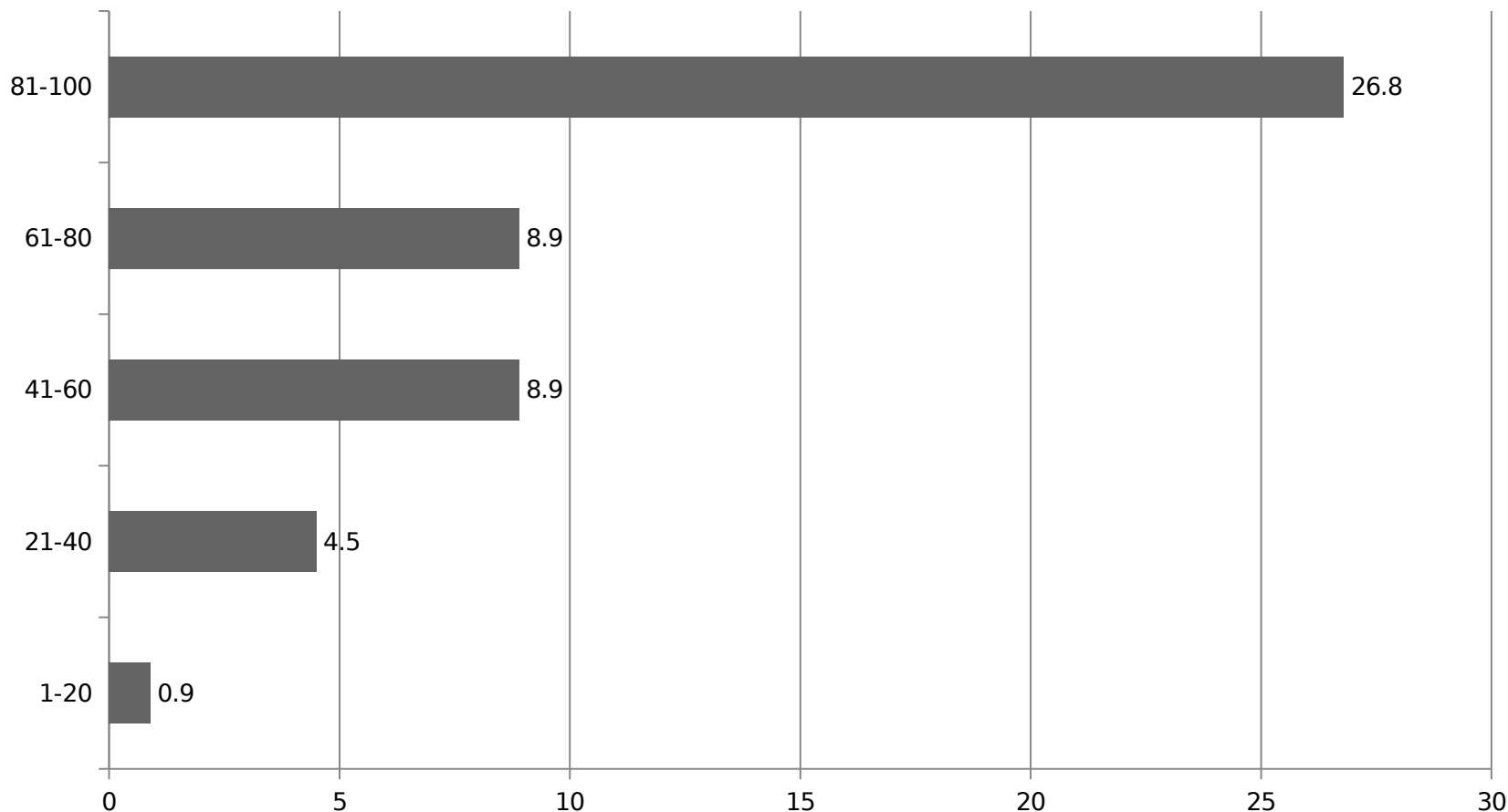 - More intensive study of link between training and

BACKUP SLIDES

CCT Training Pass Rate
ASVAB+PAST+TAPAS (n = 332)

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CCT Pass Rate by Quintile

Quintile	Pass Rate
81-100	75.8
61-80	56.7
41-60	44.8
21-40	38.5
1-20	20.6
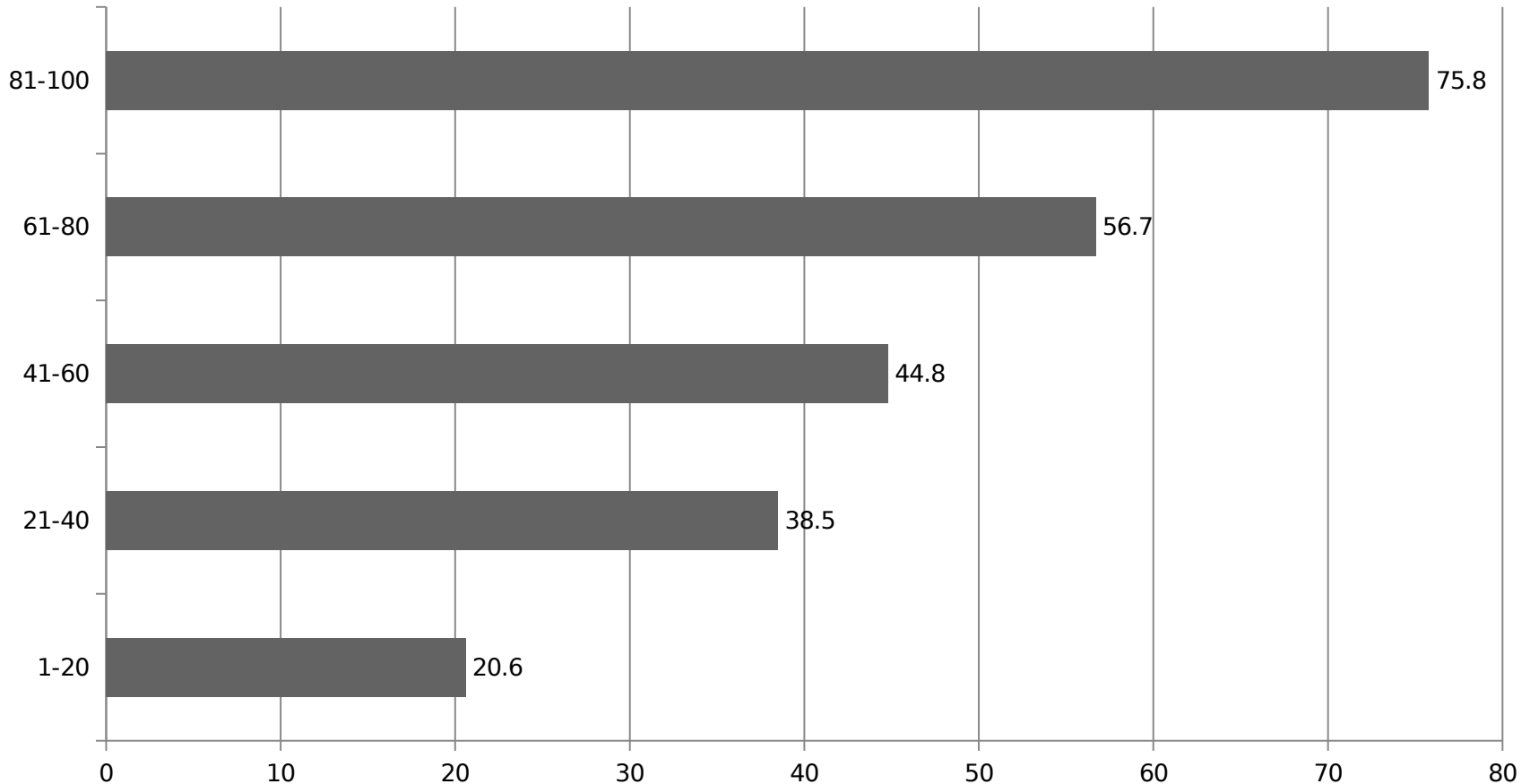
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TACP Training Pass Rate
PAST+TAPAS (n = 284)

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TACP Pass Rate by Quintile

Quintile	Pass Rate
81-100	87.5
61-80	86.0
41-60	64.9
21-40	56.1
1-20	43.9
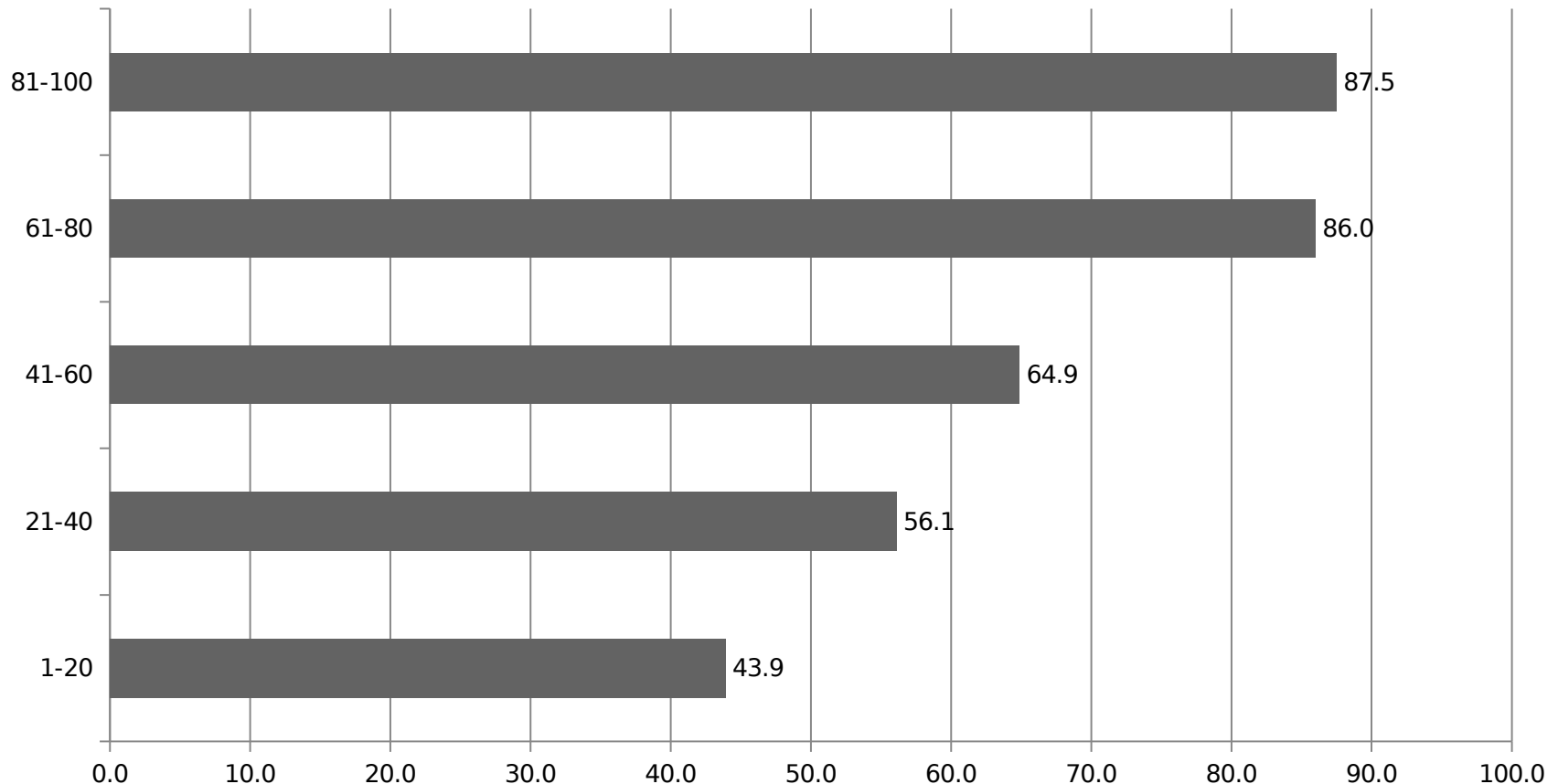
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EOD Training Pass Rate
ASVAB+PAST+TAPAS (n = 234)

EOD Pass Rate by Quintile
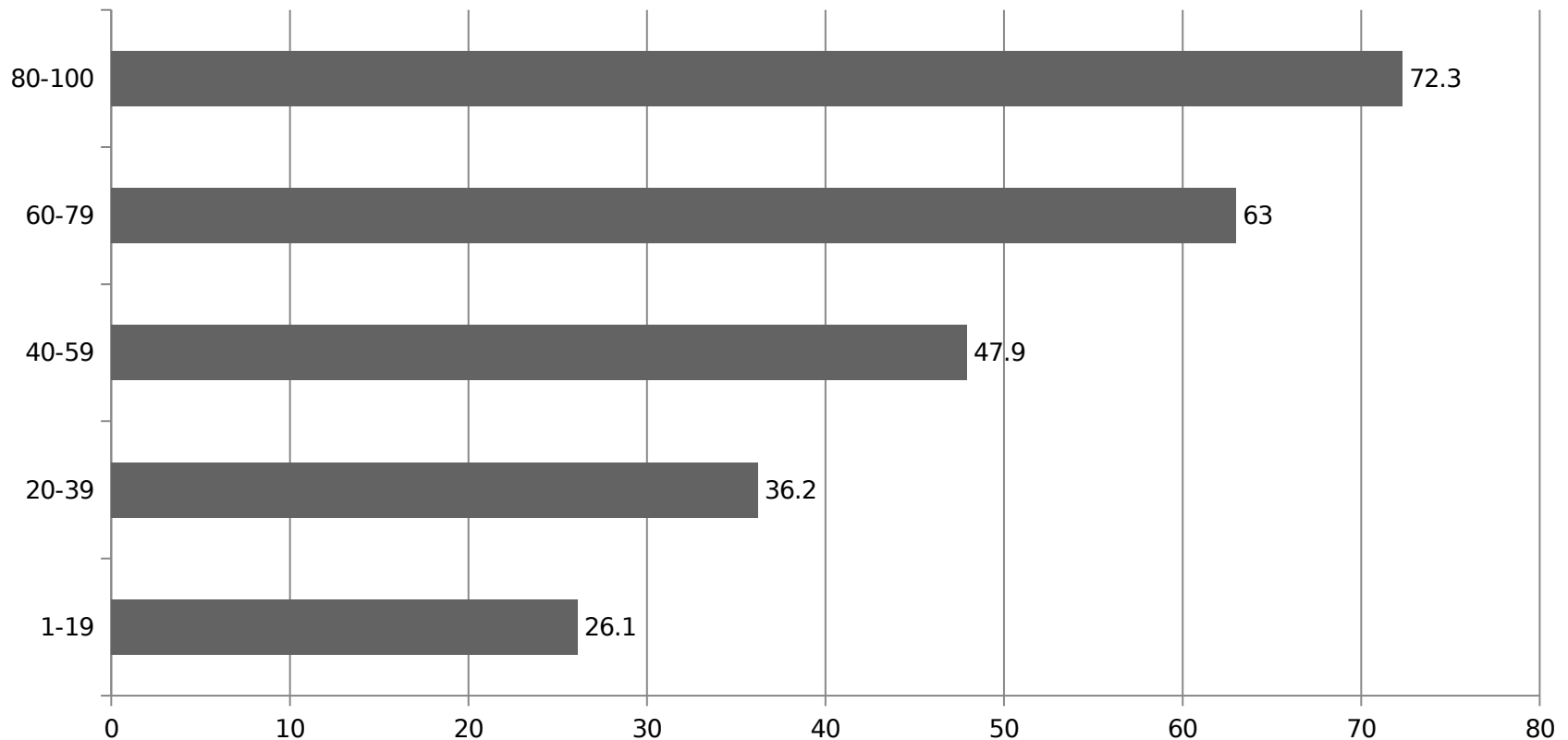
Quintile	Pass Rate
80-100	72.3
60-79	63
40-59	47.9
20-39	36.2
1-19	26.1
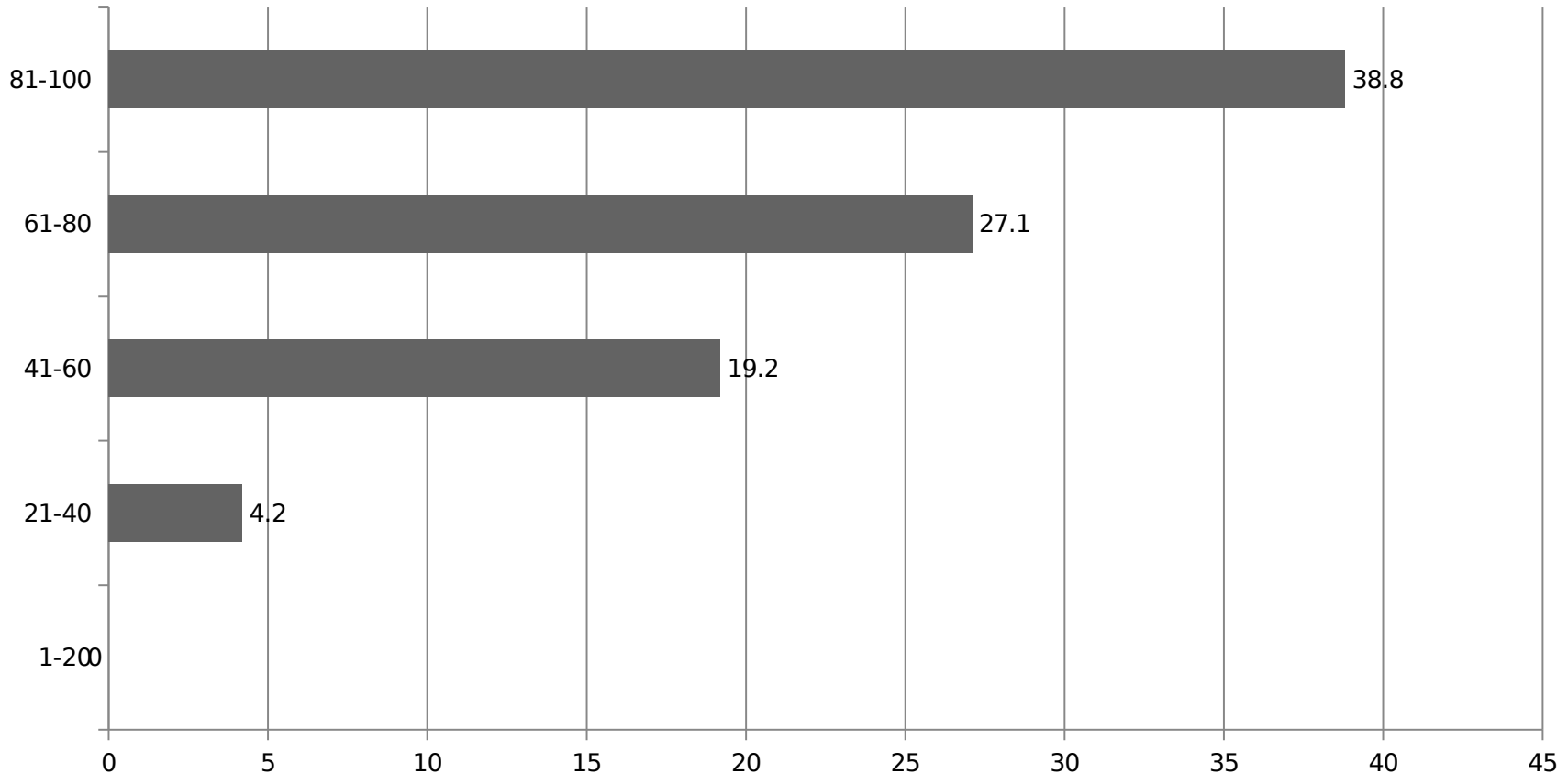
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SOWT Training Pass Rate
ASVAB+PAST (n = 223)

SOWT Pass Rate by Quintile

Quintile	Pass Rate
81-100	66.7
61-80	40.9
41-60	40.9
21-40	35.6
1-20	33.3
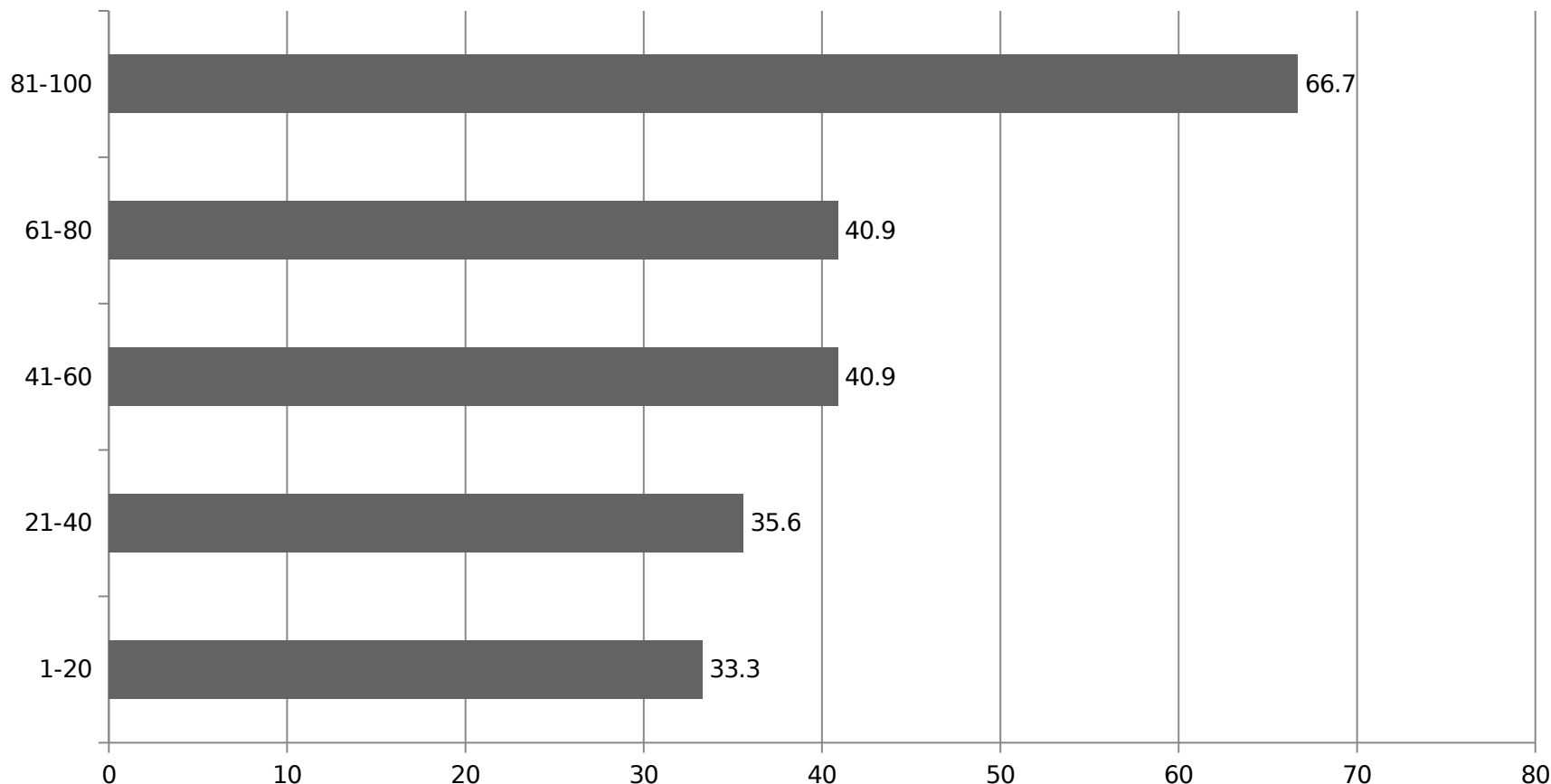
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Example TAPAS Scales

Scale	Description	Sample Content
Dominance	High scoring individuals are domineering, "take charge" and are often referred to by their peers as "natural leaders."	*+ After joining a group, I usually end up becoming the leader.* *- I've been told that I need to be more assertive.*
Adjustment	High scoring individuals are well adjusted, worry free, and handle stress well.	*+ Even if I've had a really stressful day at work, I fall asleep easily.* *- Because I constantly worry about things, it is hard for me to relax.*
Physical Condition	High scoring individuals tend to engage in activities to maintain their physical fitness and are more likely participate in vigorous sports or exercise.	*+ I like to exercise.* *- I don't consider myself to be an athletic person.*
Even-Tempered	High scoring individuals tend to be calm and stable. They don't often exhibit anger, hostility, or aggression.	*+ Even during a particularly heated argument, I keep my emotions under control.* *- People who know me well would say that I am moody.*

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- **Item format is more resistant to faking than typical trait assessments and can measure high, low, or moderate amounts of a trait (for adaptive test).**

- **Items are forced choice between two statements. Instructions are to choose the one *most* like you, even if both are like or unlike you.**

_____1a) I am very quick at processing information

< OR >

_____1b) I disapprove of people who don't vote or participate in community improvement

- **1a) and 1b) are balanced on social desirability and measure Openness domain but vary on facet and location,**

1a) measures *high* "Intellectual Efficiency" facet and

1b) measures *moderately low* " Tolerance" facet

Additional TAPAS Items (non-operational)

Which of the following statements in each pair is

***more like you*?**

__1a) People come to me when they want fresh ideas.
__1b) Most people would say that I'm a "good listener".

__2a) I take my commitments very seriously.
__2b) I set high goals and work hard to achieve them.